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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of: Henryk Oleksy
Serial No. 09/477,858
Group Art Unit 2763
Preliminary Class 714
Filed: January 5, 2000
For: A Process of Contour Control Machining of Metal Blocks

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MAY 31 2001

Technology Center 2100

Honorable Assistant Commissioner of Patents and Trademarks
Box: DAC
Washington, D.C. 20231

Express Mail No. EL435109021US

Dear Sir:

Enclosed with this Cover Letter is:

1. Petition to Make Special Under 37 C.F.R. 1.102 (c) for the above referenced Patent Application; entitled: A Process of Contour Control for Machining Metal Blocks
2. Receipt Return Postcard;
3. Please charge the prescribed fee to my Deposit Account Number 05-0423.

Respectfully submitted,

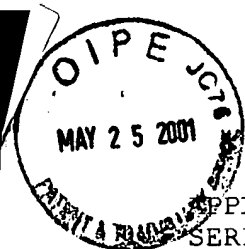
Law Office of Leon I. Edelson
Registration No. 38,863

cc: Henryk Oleksy

Date: May 25, 2001

I hereby certify that this correspondence and the documents referred to as enclosed herein are being deposited with the United States Postal Service on May 25, 2001 in an envelope as "EXPRESS MAIL POST OFFICE TO ADDRESSEE" service under 37 C.F.R. 1.10, Mailing Label Number EL435109021US addressed to the Assistant Commissioner for Patents, Box DAC, Washington, D.C. 20231.

Leon I. Edelson



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MAY 31 2001

APPLICANT OR PATENTEE: Henryk Oleksy

SERIAL OR PATENT NO. 09/477,858

FILED OR ISSUED: January 5, 2000

FOR: A PROCESS FOR CONTOUR CONTROL MACHINING OF METAL BLOCKS

Attorney's Docket No. Oleksy, Henryk

Technology Center 2100

PETITION TO MAKE SPECIAL UNDER 37 C.F.R. 1.102 (c)

Honorable Assistant Commissioner of Patents

Box DAC

Washington D.C. 20231

Applicant respectfully petitions to make special the application, Serial No. 09/477,858, filed January 5, 2000 on the basis that the instant invention will materially contribute to the more efficient utilization and conservation of energy resources under 37 CFR 1.102 (c).

Applicant therefore submits the following declaration under 37 CFR 1.68 which explains how the invention materially contributes to the more efficient utilization of energy sources.

The instant invention relates to and teaches a process for contour control machining of multiple complex curved surfaces of root sections of metal turbine blades for electric power plant turbines, which utilize heat sources to generate steam. Injection of steam against the turbine blades provides the impulse energy to cause the turbine to convert the heat energy of the steam into mechanical energy by rotation of the turbine rotor. The turbine rotor is coupled to a synchronous generator. Synchronous generators rotate at a constant speed, called synchronous speed. For 60-Hz electricity, the rotor of a synchronous generator must rotate at 3600 rpm for a two-pole machine, 1800 rpm for a four-pole machine. The turbine rotor must rotate at equivalent speeds, either 3600 rpm or 1800 rpm.

Typical electric power plants utilize one high pressure steam turbine and one or two lower-pressure steam turbines wherein the shafts are connected. Each high-pressure steam turbine rotor has from 700 to 2000 turbine blade components. Each lower pressure steam turbine rotor has 2000 to 3000 turbine blade components.

Efficiency of conversion of the heat energy of the steam into the mechanical energy of the turbine is related to multiple curved surfaces of the turbine blade. The length of the blades, for example, increases from the steam entrance to the exhaust. The present method of preparing turbine blade components requires successive machining operations with separate set-up requirements, separate successive tolerance measurements to satisfy allowable tolerances pertaining to specific dimensions, thickness, shape and curvature. Each resulting root section of the turbine blade can be characterized as the product of a series of hand operations with the potential non-uniformities inherent in hand manufacture.

The present invention provides a process for machine preparation of root sections of turbine blades wherein the complex curved

surfaces of root sections of the metal turbine blades are configured according to a pre-determined computer controlled procedure for standard computer numerical controlled conventional milling machines to machine convex and concave curvatures on a vertical machining center with rotary table or horizontal machining center with integrated rotary table.

The present invention results in standard uniform root sections of turbine blades conformed to a standard configuration previously determined. The previous process of making a root section of a turbine blade results in each root section of the turbine blade being a unique product subject to the non-uniformities inherent in hand manufacture. The effect of such non-uniformities of the root sections of the turbine blades can be magnified in actual use by the high-speed rotation of the turbine rotor.

Construction lead time of electric power plants has been reported as from 2 to 10 years depending upon the source of power, from 10 years for turbine nuclear plants to 2 years for gas turbine plants, and 6 years for coal steam turbine plants (H.G. Stoll, Least Cost Electric Utility Planning, John Wiley & Sons, 1989).

The instant invented process eliminates from eight to ten inspection and calibration steps that can pertain to undetectable variances, which, in use, can be the cause of machine (turbine) downtime or failure. The required time to manufacture a turbine generator for an electric power plant can be reduced significantly. Required hand work time to prepare the root section and the turbine blade by a skilled machinist of an estimated 20 working days is reduced to computer controlled machine time, the actual time required determined by the number of computer controlled machines available.

The instant invented process can reduce construction time for a new electric power plant significantly by reducing the time required to manufacture the required number of turbine blade and root section components required. Standard repair turbine blades components can be prepared to replace damaged blades in use, thus reducing electric utility plant downtime which otherwise can be extensive since the turbine blade component must be manufactured to specifications. Spare turbine blade components can be produced for a specific turbine and stored for later use.

The current and future electric power energy shortage has been estimated by the present administration of President Bush as requiring between 1300 and 1900 new power plants over the next 20 years just to meet projected increases in nationwide energy demand (speech by Vice President Cheney in Toronto, Canada. on April 30, 2001.)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PETITION TO MAKE SPECIAL UNDER 37 C.F.R. 1.102 (c)

Applicant: Henryk Oleksy

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Title: A PROCESS FOR CONTOUR CONTROL MACHING OF METAL BLOCKS

Applicant respectfully states that the instant invention increase the efficient utilization of energy resources by increasing the availability of energy resources within the required time frame for construction of new energy sources and contributes to the more efficient utilization of energy sources in the reasonable foreseeable future by reducing the long lead time required for new power plants.

Applicant therefore respectfully petitions to make special the instant application, Serial No. 09/477,858, and advance out of turn the instant application in that the invention will materially contribute to the development or conservation of energy resources by permitting faster construction of new power plants to provide multiple new energy sources.

Applicant states that he is the sole inventor of the invention claimed. Applicant states that his residence is as stated in the application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing therein, or any patent to which this verified statement is directed.

Henryk Oleksy

NAMES OF INVENTORS

Signature(s) of Inventors

Henryk Oleksy 05-21-01

Subscribed and sworn to before me this 21st day of May, 2001.

Leon I. Edelson
Notary Public

